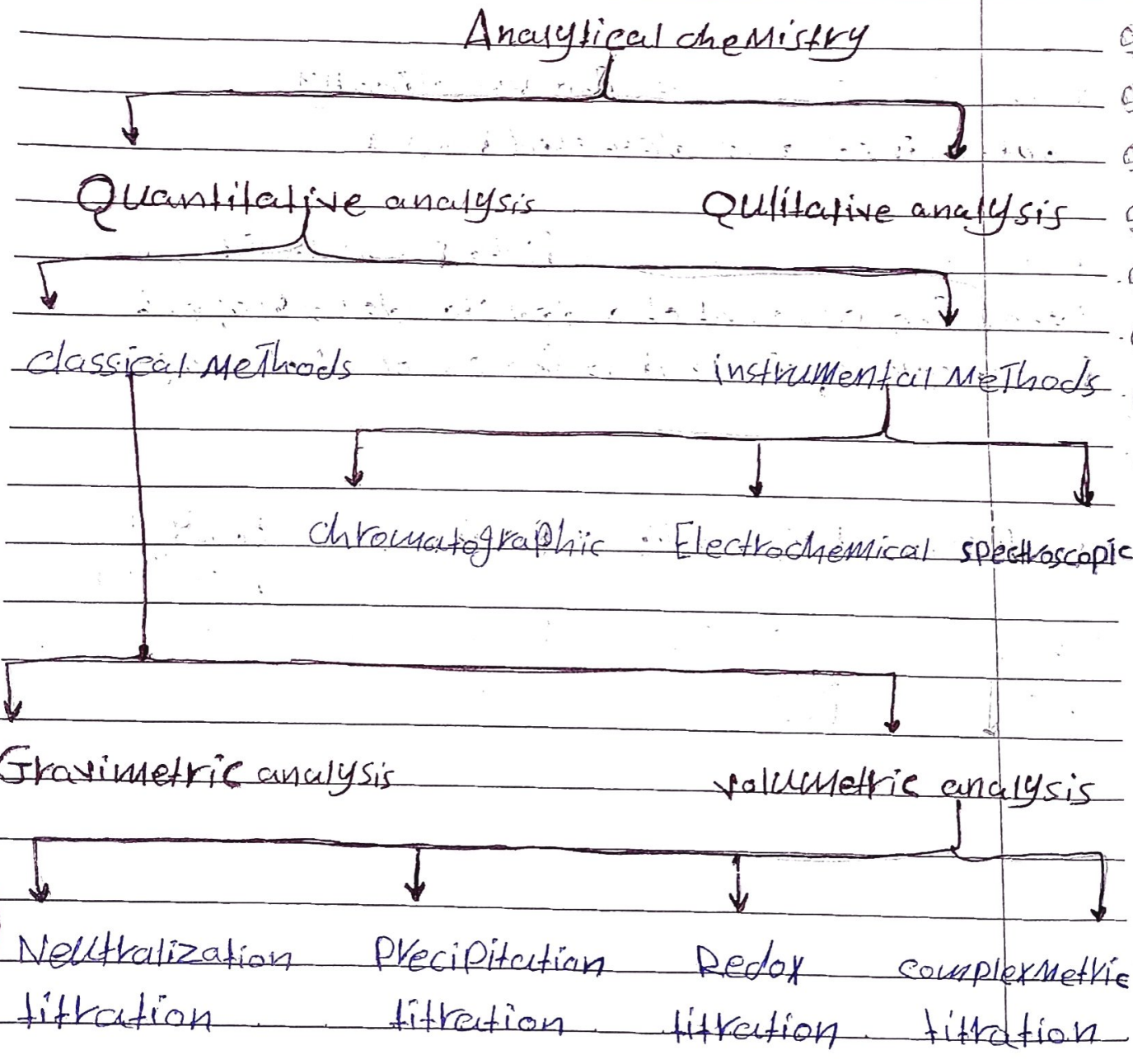
Lab 1

Analytical chemistry.

*-Definition of analytical chemistry :-
It's a branch of chemistry which deals with the study on the identification of the is quantites and concentration.



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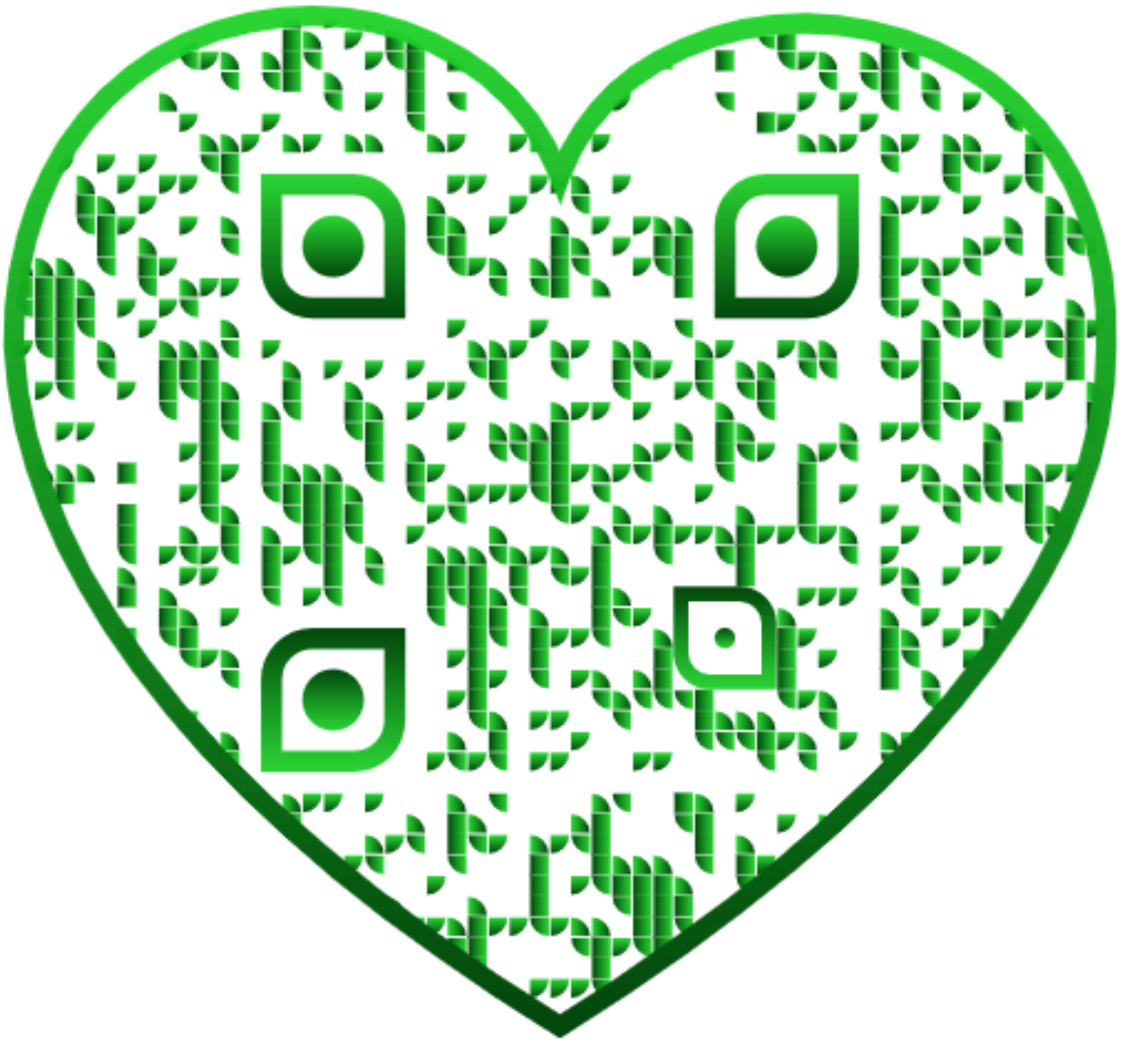

follow

Equivalent weight / Eq.wt /

① for acid = $\frac{M.wt}{No.\ of\ H}$

Ex:-

$H_2SO_4 = \frac{98}{2} = 49$ g.eq

$HCl = eq.wt = \frac{36.5}{1} = 36.5$ g.eq

② for base = $\frac{M.wt}{No.\ of\ OH}$

ex:

$NaOH$ eq.wt $= \frac{40}{1} = 40$ g.eq

③ for salt = $\frac{M.wt}{No.\ of\ cation \times oxidation\ number}$

ex:-

$CaCl_2$ eq.wt $= \frac{111}{2 \times 1} = 55.5$ g.eq

$40 \times 1 + 35.5 \times 2 = 111$

$Fe_2(SO_4)_3$ eq.wt $= \frac{400}{6} = 66.66$ g.eq

$MgCl_2 = \frac{95}{2} = 47.5$

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Molecular weight (M.Wt) :-
is the sum of the atomic mass in the Molecules

Ex :-

HCl H = 1 Cl = 35.5

HCl → 1 + 35.5 = 36.5 g/mol

NaOH Na = 23 O = 16 H = 1

NaOH → 23 + 16 + 1 = 40 g/mol

MgCl2 → Mg = 24 Cl = 35.5

MgCl2 → 24 + 35.5 × 2 = 95 g/mol

K2CO3 K = 39 C = 12 O = 16

K2CO3 → 39 × 2 + 12 × 1 + 16 × 3 = 138 g/Mol

Al2CO3 Al = 27 C = 12 O = 16

Al2CO3 → 27 × 2 + 12 × 1 + 16 × 3 = 114 g/mol

Ca(OH)2 Ca = 40 O = 16 H = 1

Ca(OH)2 → 40 × 1 + 2 × 16 + 2 × 1 = 74 g/Mol

Al2(CO3)3 → 27 × 2 + 3 × 12 + 9 × 16 = 234 g/mol

~~4 × 4 = 9~~

follow Lab one

* Neutralization: It's a Titration reaction between acid and base

* Titration: is Laboratory technique That Measures The concentration of analyte between analyte and standard solution

* The End Point: It's The Practically determined and detected Point

* The Equivalent Point: is The Point in titration when The amount of added standard reagent is exactly equivalent to The amount of analysis

Indicator	Acid Medium	Basic Medium	Neutral Medium
Ph-Ph	colorless	pick color	colorless
M·O	Red	Yellow	orange

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